

**CLAIMS**

1. An optical microscope suitable for observation of several spots of an object placed in an object plane of the microscope, comprising a light source, an objective and a light beam coming from the light source, microscope comprising a modifiable optical transmission screen, comprising zones each presenting a first passing state and a second closed state, placed on the path of the optical beam upstream from the object and able to generate in the object plane an image coinciding substantially with the spots of the object to be observed.
2. Microscope according to claim 1, wherein the modifiable optical transmission screen comprises a matrix of mirrors, each of the mirrors presenting a first position enabling the light beam to be reflected to the object and a second position enabling the light beam to be diverted from the optical path leading to the object.
3. Microscope according to claim 1, wherein the modifiable optical transmission screen comprises a matrix of liquid crystal elements, each of the liquid crystal elements presenting a first transparent state and a second opaque state.
4. Microscope according to claim 3, wherein the liquid crystal elements of the matrix of liquid crystal elements present at least a third polarising state.
5. Microscope according to claim 1, wherein the modifiable optical transmission screen is arranged directly on the object.
6. Microscope according to claim 1, wherein the object is arranged between the objective and the modifiable optical transmission screen.
7. Microscope according to claim 1, wherein the light source is formed by an array of light-emitting diodes.
8. Microscope according to claim 7, wherein the array of light-emitting diodes comprises light-emitting diodes of different colours.
9. An operating process of an optical microscope according to claim 7, comprising

lighting of the object by emission of a series of light impulses at preset intervals.